

Specifications for the conversion of existing conveyor chain delivery, Stainless Steel V-Box spreaders to dual auger delivery spreaders.

Auger trough dimensions shall be as follows:

10' spreader modification will require hopper dimensions as follows: Auger trough length – 144", width - 17 3/4" height - 8 3/4" (Item: 1000184752)

15' spreader modification will require hopper dimensions as follows: Auger trough length – 204", width - 17 3/4" height - 8 3/4" (Item: 1000184753)

19' spreader modification will require hopper dimensions as follows: Auger trough length – 240", width – 20 3/4" height - 8 3/4" (Item: 1000184754)

The operation will require the removal of the existing conveyor chain trough, front cross shaft and bearings, existing drag chain, rear gear box, rear cross shaft and bearings. Successful bidder is responsible for the proper disposal of all parts removed. Additional modification of the v-box shall be pre-approved by TDOT. Spreader shall be fully operational upon completion of the modifications and shall be compatible with our current hydraulic and ground speed control system, FA5100 and FA5100EX.

The spreader will then be modified to include the following:

A new auger trough and auger assembly for dual auger delivery of material shall be provided and installed per the following. The trough shall be constructed from 10 Ga. 201 non-magnetic grade stainless steel (2B finish) and shall be lined (both sides and bottom) with 3/4" thick UHMW polyethylene. The liner shall be bolted using all stainless attaching hardware to include carriage bolts inside the hopper weldment and stainless top lock nuts and flat washers. The auger trough is to be welded in place of the original conveyor chain delivery trough and must be continuously welded to the V-Box frame, sides and head plate (stitch welding is allowed – no gaps in weld). All stainless steel joints shall be welded with stainless steel welding wire.

Auger System:

- A. The dual auger system shall be twin augers, running longitudinally with the body, feeding material the full length of the hopper. Augers shall be 7" in diameter for 10 foot and 15 foot spreaders and shall be 9" in diameter for 19 foot spreaders.
- B. The augers shall consist of a 4" O.D. steel pipe with a 2" steel end shaft and steel fitting continuously welded the full length. The fluting shall be 1/2" thick steel. The fluting shall have (3) different pitches so the hopper will unload evenly from the front, middle and rear. Outer edge of fluting shall include welded steel hardened matrix.

- C. Each auger shall be driven by a 14 H.P. hydraulic motor. The passenger side motor shall include an internal pulse sensor that connects to the spreader controller in order to allow ground speed control. Sensor must be compatible with existing ground speed controllers units, Force America 5100 EX and Force America 5100. The motors shall be direct coupled to dual speed reducing, gear boxes with a Ratio of 3.6-1. The motors shall be connected hydraulically in series with return oil out of the motor first in line directed to power the downstream motor. The auger motors and gear boxes will provide each auger with 27,576 lb./in. of torque.
- D. The coupling shall be equipped with a grease fitting so that the motor spline and coupling can be lubricated.
- F. The idler end of the auger shall be supported by a 4 bolt flange, heavy duty, dust sealed, self-aligning ball bearing. This bearing shall be designed to be lubricated from the rear of the body. All lines shall be fully supported with stainless steel hardware.
- G. Both the auger drive and idler end plate shall be manufactured from 3/16" Stainless steel.
- H. A height adjustable stainless steel inverted "v" shall be provided to keep material load off the auger for easier auger start-up. Range height adjustments up to 12" required.
- I. A protective stainless steel or galvanized grate shall be placed over the exposed auger outside the hopper. Grate shall be designed so that operator hand will not fit thru the grate.
- J. The spreader shall be equipped with a safety interlock device to positively prevent power from reaching the auger motor when the auger cover and top screens are opened beyond the normal operation position.
- K. Bidder shall provide complete set of drawings showing the material to be provided. These drawings shall be provided as part of the bid package. Failure to submit drawings with the completed bid shall be considered non-compliance to specifications and will result in rejection of the bid.
- L. All hydraulic hoses shall be replaced with SAE100/R17.

Leg Stand Frame Specifications:

Stand for 10' spreader (Item: 1000184755)

Stand for 15' spreader (Item: 1000184756)

Stand for 19' spreader (Item: 1000184757)

Leg stand frame and legs shall be hot dipped galvanized **OR** stainless steel (no mixing of materials allowed). Leg stand shall be constructed using 3" X 3" X 3/16" tubing which form four long-members running the length of the stand that support the V box. The front of the stand assembly includes two folding and self-storing 3" X 3" tubular legs which will support the empty weight of the spreader when it has been removed from the dump body. Front legs are to have a minimum of three grease zerks to lubricate the inner tube on which the leg assembly rotates.

The stand shall be equipped with holes spaced on 24" centers for mounting to v-box spreader.

Entire leg-stand frame shall be welded solid where possible.

Guide Plates: The spreader stand shall include a guide plate system to assist in loading the spreader into the truck body. Guide plates are to be constructed using 1/2" thick galvanized steel or stainless steel plates which are tapered to guide the spreader into the correct position inside the body and must be designed to position the spreader in the center of the body and thus protect

Legs:

Rear spreader legs are constructed using 3 1/2" X 3 1/2" X 1/4" tubing. **The legs must be capable of lifting above the height of at least 35" above the ground level so as not to interfere with trailer connections and operation.**

Front legs shall be designed to lock at an angle of 90 degrees down in relation to the frame rails for storage, and shall also be designed to swing up, nest between frame rails, and lock for installation of spreader into the dump body.

Left and right front upper legs shall be connected by a cross tube constructed from formed 7 gauge steel. Front legs to be bolted to the cross tube.

Left and Right front legs shall be equipped with 1/2" diameter spring loaded pins to lock the legs in the standing and folded positions.

Front upper legs shall be equipped with 5/8" diameter spring-loaded pins to lock lower leg into the desired height.

Guide plates are to be constructed using 1/2" thick stainless steel plates which are tapered to guide the spreader into the correct position inside the body and must be designed to position the spreader in the center of the body and thus protect the liquid tanks from damage if the spreader is not properly positioned when loading the unit has begun.

OR

Leg stand assembly shall be hot dipped galvanized **or** stainless steel.

Spreader shall come equipped with a storage stand system designed to be bolted directly to the v-box.

Skid type arrangement shall be constructed entirely of structural tubing.

Main frame shall be constructed of 3" X 4" X 1/4" tubing.

There shall be sufficient lateral bracing constructed of 1-1/2" X 3" X 3/16" tubing to support the hopper.

There shall be longitudinal supports constructed of 1-1/2" X 3" X 3/16" tubing with holes spaced on 24" centers for mounting to hoppers.

The forward leg shall be constructed of 3-1/2" X 3-1/2" X 3/16" tubing and shall be adjustable in height and designed to fold up as the vehicle backs underneath the stand.

Cast iron caster wheels with greaseable steel ball bearings shall be mounted at the front of the main frame to allow the unit to roll into the vehicle.

Rear legs shall be of a self-storing telescopic design. (**rear legs must be capable of lifting above the height of 35" above ground level so as not to interfere with trailer connections and operation**)

Lower leg shall be constructed of 3-1/2" X 3-1/2" X 3/16" tubing and shall telescope inside the upper leg that is constructed of 4" X 4" X 3/16" tubing for storage.

Lower rear legs shall be equipped with a swivel mounted foot to provide additional stability during loading and unloading operations.

Successful bidder shall be required to pick up v-boxes at the four TDOT regional facilities listed below and shall be required to deliver the completed units back to the region of origin when completed. Cost for pick-up and delivery should be included in the bid price.

TDOT Region 1
1035 Maintenance Lane, Bldg. E
Knoxville, TN 37914
Attn. Eric Wolfenbarger
865-594-2697

TDOT Region 3
6601 Centennial Blvd.
Nashville, TN 37243
Attn. Bill Hamilton
615-350-4424

TDOT Region 2
7500 Volkswagon Drive
Chattanooga, TN 37416
Attn. Lonnie Hinkle
815-296-9624

TDOT Region 4
200 Benchmark Place, Bldg. E
Jackson, TN 38301
Attn. Neil Brown
731-935-0265